Legends

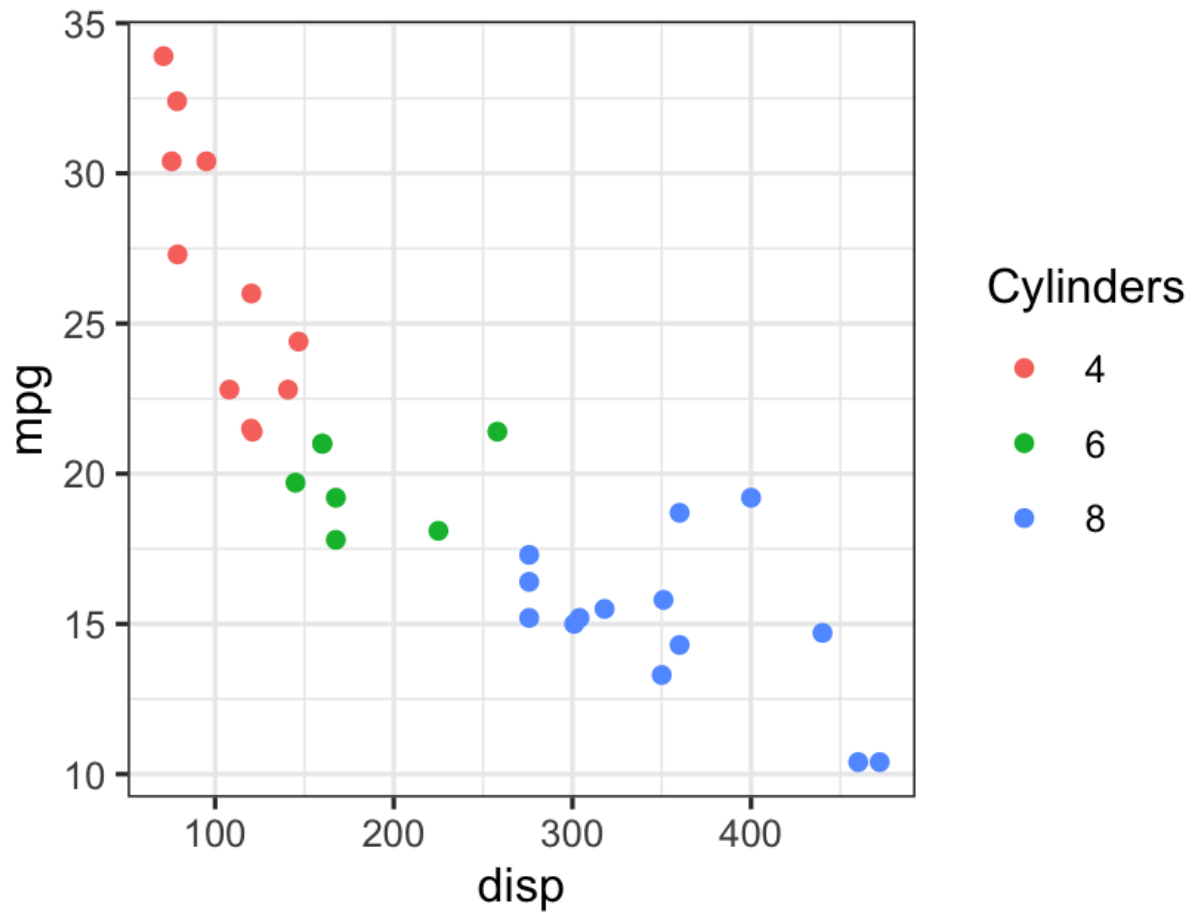## Full Legend

```
ggplot(data = mtcars,
            mapping = aes(x = disp,
                      y = mpg,
                      color = hp)) +
        geom_point() +
guides(color = guide_colorbar(
title = "power (hp)",
barwidth = 1,
ticks = FALSE,
label.position = "left",
title.position = "bottom"))
```

Discrete Legend

```
ggplot(data = mtcars,
mapping = aes(x = disp,
                      y = mpg,
                      color =as.factor(cyl))) +
geom_point() + xlab("Displacement (m)") + ylab("Fuel efficiency
guides(color = guide_legend(title="Cylinders")) # discrete
```

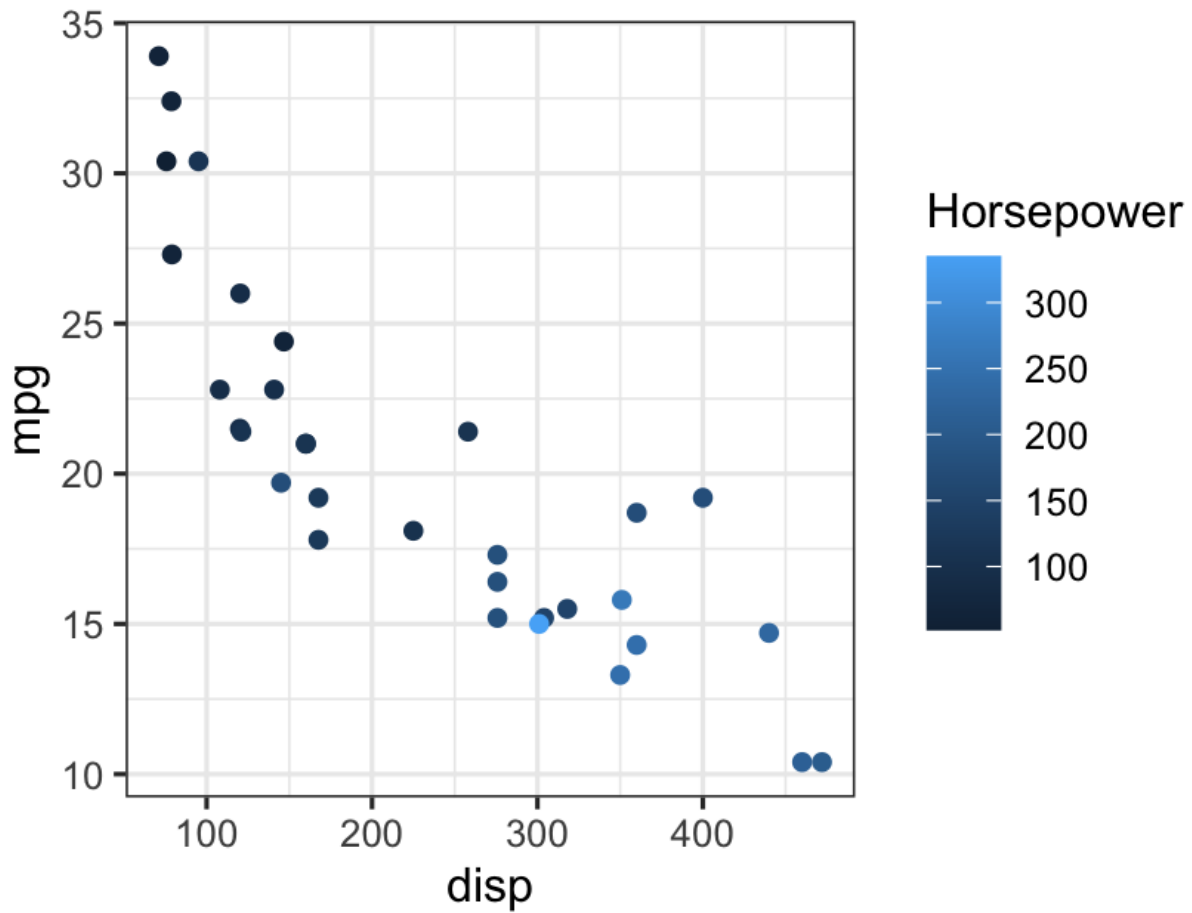## Continuous Legend

```
ggplot(data = mtcars,

mapping = aes(x = disp,

                    y = mpg,
                    color = hp)) +
```
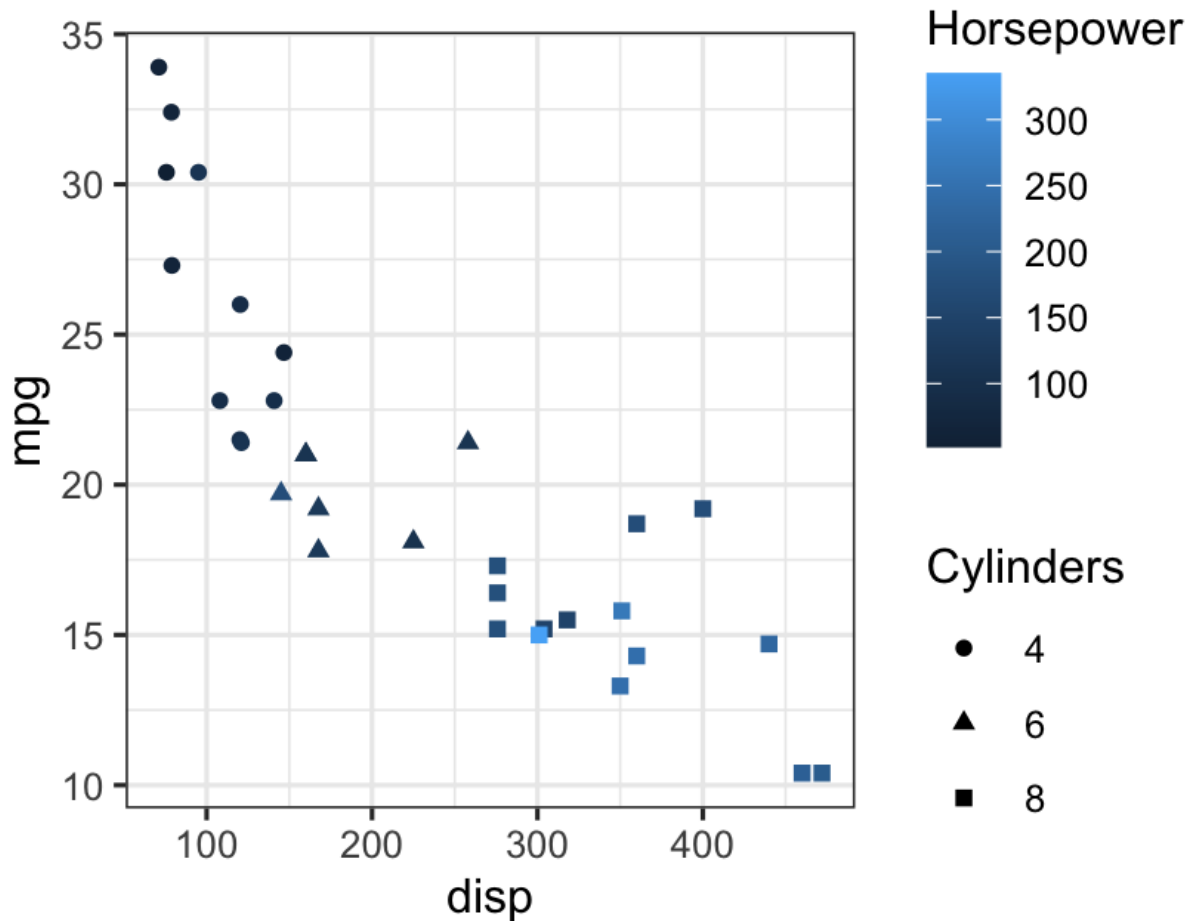
```
geom_point() +

xlab("Displacement (m)") + ylab("Fuel efficiency (mpg)") +
guides(color = guide_colorbar(title="Power (hp)",  barwidth=1))
```


*barwidth changes the width of the legend bar

Multiple Legends

```
ggplot(data = mtcars,
mapping = aes(x = disp, y = mpg,
color = hp,
shape =
as.factor(cyl))) +
geom_point() +
guides(color = guide_colorbar(order = 1, title="Horspower (hp)")
shape = guide_legend(order = 2, title="Cylinders"))
```

*order tells you which order you want the legends to be in

Legend Position

```
ggplot(data = mtcars,
mapping = aes(x = disp, y = mpg,
size = wt, shape = as.factor(cyl))) +
geom_point() +
theme(legend.position="top") + labs(x="Displacement (cu.in).", y ="Fuel efficiency
(mpg)", size="Weight (1000lbs)", shape="Cylinders")
```
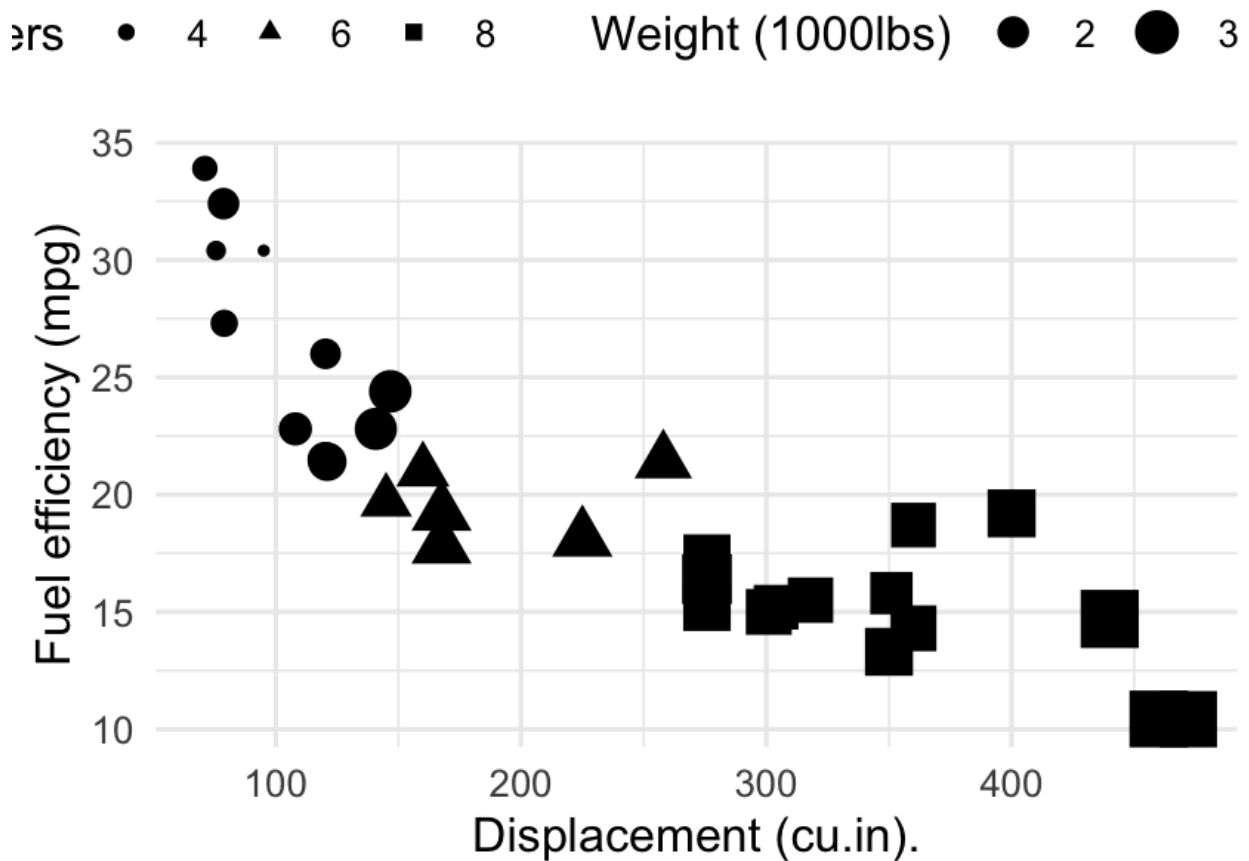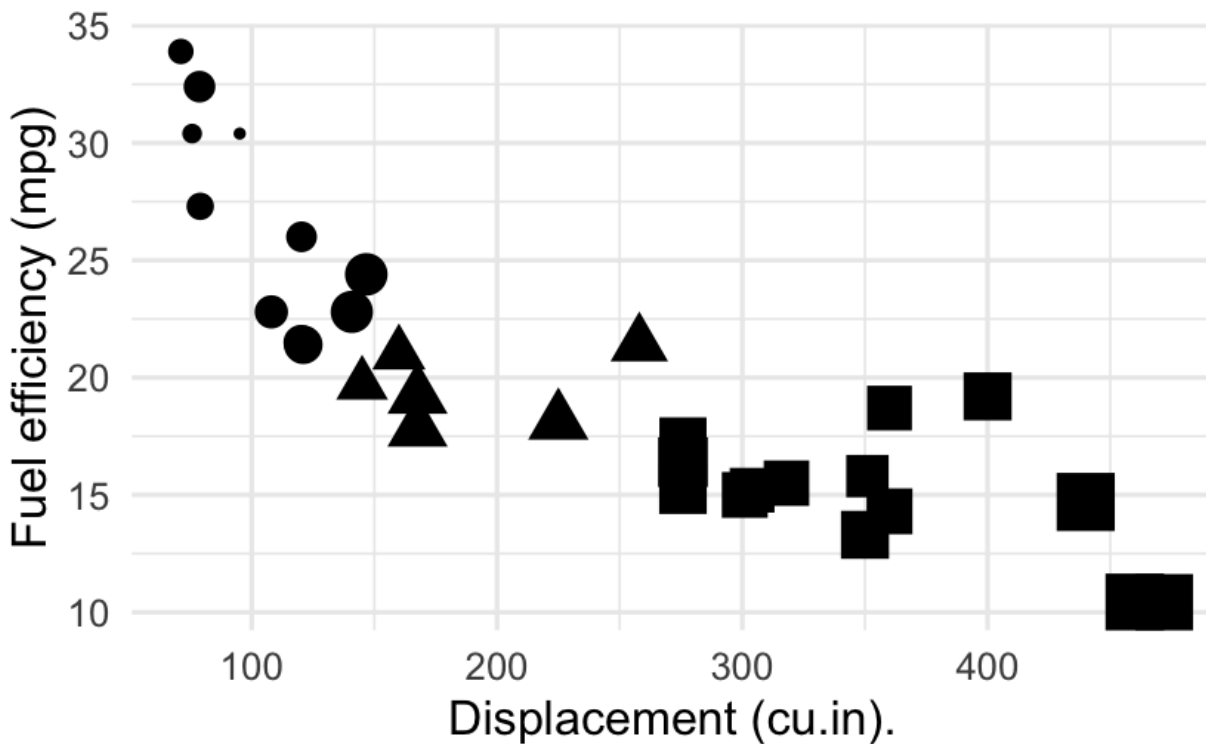

Flipping Position of Legends

```
ggplot(data = mtcars,
mapping = aes(x = disp, y = mpg,
size = wt, shape = as.factor(cyl))) +
geom_point() + theme(legend.position="top") + labs(x="Displacement (
cu.in).", y ="Fuel efficiency (mpg)") + guides(size = guide_legend(title="weight
(1000lbs)", order = 1),                                              shape =
guide_legend(title="Cylinders", order = 2))
```



```
ggplot(data = data_basketball_rowing, aes(x = weight,
                    y = height,
                    fill = sex
                    )) +
```

```
geom_point(alpha = 0.5, size = 5, pch = 21, color = "white")
facet_grid(cols=vars(sport)) +
labs(fill = "Gender") +
scale_fill_manual(labels = c("Male", "Female"),
values = c("darkorange", "dodgerblue"))
```